



SEQUENCE LISTING

<110> EVANS, RONALD M.

<120> XENOBIOTIC COMPOUND MODULATED EXPRESSION SYSTEMS AND
USES THEREFOR

<130> 088802-5211

<140> 09/840,008

<141> 2001-04-20

<150> 09/227,718

<151> 1999-01-08

<150> 09/458,366

<151> 1999-12-09

<150> 09/005,286

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<160> 44

<170> PatentIn Ver. 2.1

<210> 1

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<213> Homo sapiens

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<221> CDS

<222> (583)..(1887)

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ccttttcctg tgaaaaatgt gtgaagagac ctgaaaagaaa aaagttaggga gaacataatg 180

agaacaaaata cggtaatctc ttcatttgct agttcaagtg ctggacttgg gacttaggag 240

gggcaatggc gccgcttagt gcctacatct gacttggact gaaatatagg tgagagacaa 300

gattgtctca tatccgggaa aatcataacc tatgacttagg acggaaagag gaagcactgc 360

ctttacttca gtggaaatct cggcctcagc ctgcaagcca agtgttcaca gtgagaaaag 420

caagagaata agctaatact cctgtcctga acaaggcagg ggctccttgg taaagctact 480

ccttgatcga tcctttgcac cggattgttc aaaatggacc ccaggggaga agtcggagca 540

aagaacctac caccaaggcag tccaagaggc ccagaagcaa ac ctg gag gtg aga 594
Met Glu Val Arg

ccc aaa gaa agc tgg aac cat gct gac ttt gta cac tgt gag gac aca Pro Lys Glu Ser Trp Asn His Ala Asp Phe Val His Cys Glu Asp Thr	642
5 10 15 20	
gag tct gtt cct gga aag ccc agt gtc aac gca gat gag gaa gtc gga Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp Glu Glu Val Gly	690
25 30 35	
ggc ccc caa atc tgc cgt gta tgt ggg gac aag gcc act ggc tat cac Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala Thr Gly Tyr His	738
40 45 50	
tcc aat gtc atg aca tgt gaa gga tgc aag ggc ttt ttc agg agg gcc Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe Arg Arg Ala	786
55 60 65	
atg aaa cgc aac gcc cgg ctg agg tgc ccc ttc cgg aag ggc gcc tgc Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg Lys Gly Ala Cys	834
70 75 80	
gag atc acc cgg aag acc cgg cga cag tgc cag gcc tgc cgc ctg cgc Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala Cys Arg Leu Arg	882
85 90 95 100	
aag tgc ctg gag agc ggc atg aag aag gag atg atc atg tcc gac gag Lys Cys Leu Glu Ser Gly Met Lys Glu Met Ile Met Ser Asp Glu	930
105 110 115	
gcc gtg gag gag cgg gcc ttg atc aag cgg aag aaa agt gaa cgg Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys Ser Glu Arg	978
120 125 130	
aca ggg act cag cca ctg gga gtg cag ggg ctg aca gag gag cag cgg Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr Glu Glu Gln Arg	1026
135 140 145	
atg atg atc agg gag ctg atg gac gct cag atg aaa acc ttt gac act Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys Thr Phe Asp Thr	1074
150 155 160	
acc ttc tcc cat ttc aag aat ttc cgg ctg cca ggg gtg ctt agc agt Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly Val Leu Ser Ser	1122
165 170 175 180	
ggc tgc gag ttg cca gag tct ctg cag gcc cca tcg agg gaa gaa gct Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser Arg Glu Glu Ala	1170
185 190 195	
gcc aag tgg agc cag gtc cgg aaa gat ctg tgc tct ttg aag gtc tct Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser Leu Lys Val Ser	1218
200 205 210	
ctg cag ctg cgg ggg gag gat ggc agt gtc tgg aac tac aaa ccc cca Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn Tyr Lys Pro Pro	1266
215 220 225	

gcc gac agt ggc ggg aaa gag atc ttc tcc ctg ctg ccc cac atg gct Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu Pro His Met Ala 230 235 240	1314
gac atg tca acc tac atg ttc aaa ggc atc atc agc ttt gcc aaa gtc Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser Phe Ala Lys Val 245 250 255 260	1362
atc tcc tac ttc agg gac ttg ccc atc gag gac cag atc tcc ctg ctg Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln Ile Ser Leu Leu 265 270 275	1410
aag ggg gcc gct ttc gag ctg tgt caa ctg aga ttc aac aca gtg ttc Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe Asn Thr Val Phe 280 285 290	1458
aac gcg gag act gga acc tgg gag tgt ggc cgg ctg tcc tac tgc ttg Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu Ser Tyr Cys Leu 295 300 305	1506
gaa gac act gca ggt ggc ttc cag caa ctt cta ctg gag ccc atg ctg Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Leu Glu Pro Met Leu 310 315 320	1554
aaa ttc cac tac atg ctg aag aag ctg cag ctg cat gag gag gag tat Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His Glu Glu Glu Tyr 325 330 335 340	1602
gtg ctg atg cag gcc atc tcc ctc ttc tcc cca gac cgc cca ggt gtg Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp Arg Pro Gly Val 345 350 355	1650
ctg cag cac cgc gtg gtg gac cag ctg cag gag caa ttc gcc att act Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln Phe Ala Ile Thr 360 365 370	1698
ctg aag tcc tac att gaa tgc aat cgg ccc cag cct gct cat agg ttc Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro Ala His Arg Phe 375 380 385	1746
ttg ttc ctg aag atc atg gct atg ctc acc gag ctc cgc agc atc aat Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu Arg Ser Ile Asn 390 395 400	1794
gct cag cac acc cag cgg ctg ctg cgc atc cag gac ata cac ccc ttt Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp Ile His Pro Phe 405 410 415 420	1842
gct acg ccc ctc atg cag gag ttg ttc ggt atc aca ggt agc tga Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr Gly Ser 425 430	1887
gtggctgtcc ttgggtgaca cctccgagag gttagtttagac ccagagccct ctgagtcgcc 1947	
actccccggc caagacagat ggacactgcc aagagccgac aatgccctgc tggcctgtct 2007	
cccttagggaa ttccctgctat gacagctggc tagcattcct caggaaggac atggggtgcc 2067	

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<213> Homo sapiens

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Glu Glu Val Gly Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala
35 40 45
Thr Gly Tyr His Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe
50 55 60
Phe Arg Arg Ala Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg
65 70 75 80
Lys Gly Ala Cys Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala
85 90 95
Cys Arg Leu Arg Lys Cys Leu Glu Ser Gly Met Lys Lys Glu Met Ile
100 105 110
Met Ser Asp Glu Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys
115 120 125
Lys Ser Glu Arg Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr
130 135 140
Glu Glu Gln Arg Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys
145 150 155 160
Thr Phe Asp Thr Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly
165 170 175
Val Leu Ser Ser Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser
180 185 190
Arg Glu Glu Ala Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser
195 200 205
Leu Lys Val Ser Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn
210 215 220
Tyr Lys Pro Pro Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu
225 230 235 240
Pro His Met Ala Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser
245 250 255

*Ar
out*

Phe Ala Lys Val Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln
 260 265 270

Ile Ser Leu Leu Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe
 275 280 285

Asn Thr Val Phe Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu
 290 295 300

Ser Tyr Cys Leu Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Leu
 305 310 315 320

Glu Pro Met Leu Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His
 325 330 335

Glu Glu Glu Tyr Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp
 340 345 350

Arg Pro Gly Val Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln
 355 360 365

Phe Ala Ile Thr Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro
 370 375 380

Ala His Arg Phe Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu
 385 390 395 400

Arg Ser Ile Asn Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp
 405 410 415

Ile His Pro Phe Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr
 420 425 430

Gly Ser

<210> 3
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP3A1

<400> 3
tagacagttc atgaagttca tctac 25

<210> 4
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
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rCYP3A2

<400> 4 taaggcgttc ataaagttca tctac 25

<210> 5
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
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<400> 5 actgttagttc ataaagttca catgg 25

<210> 6
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
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<400> 6 caatcagttc aacagggttc accaat 26

<210> 7
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
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rP450R

<400> 7 cacaggtgag ctgaggccag cagcaggtcg aaa 33

<210> 8
<211> 27
<212> DNA
<213> Artificial Sequence

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rCYP2A1

<400> 8
gtgcagggttc aactggaggt caacatg

27

<210> 9
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
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<400> 9
gtgctgggttc aactggaggt cagtatg

27

<210> 10
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydroxylase, rCYP2C6

Art
<400> 10
agtctagttc agtgggggtt cagtctt

27

<210> 11
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydroxylase, hCYP2E1

<400> 11
gagatgggttc aaggaagggt cattaac

27

<210> 12
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat with spacer of 0 nucleotides

<400> 12
catagtcagg tcaaggtcag atcaac

26

<210> 13
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 1 nucleotides

<400> 13
catagtcagg tcataaggta gatcaac 27

<210> 14
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 2 nucleotides

<400> 14
catagtcagg tcaataggc agatcaac 28

<210> 15
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 3 nucleotides

<400> 15
catagtcagg tcataatagg cagatcaac 29

<210> 16
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
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with spacer of 4 nucleotides

<400> 16
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<210> 17
<211> 31
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 5 nucleotides

<400> 17
catagtcagg tcatatatac gtcagatcaa c           31

<210> 18
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
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<400> 18
catagtcagg tcatatataaa ggtcaagatc aac         33

<210> 19
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 7 nucleotides

<400> 19
catagtcagg tcatatataat aggtcagatc aac         33

<210> 20
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
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<400> 20
catagtcagg tcatatataat ataaggtagt atcaac       36

<210> 21
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 15 nucleotides

<400> 21
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<210> 22
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Example of a response element suitable for practice of the invention method

<220>
<221> modified_base
<222> (7)..(11)
<223> This region may encompass 5, 4 or 3 nucleotides, independently selected from a, c, t or g

<400> 22
agttcannnn ntgaact

17

<210> 23
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
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<220>
<221> modified_base
<222> (7)..(12)
<223> a, c, t or g

<400> 23
tgaactnnnn nnaggtca

18

<210> 24
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 24
tgaactcaa ggaggtca

18

<210> 25
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 0
nucleotides

<400> 25
agcttaggtc atgaccta

18

<210> 26
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
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repeat response element with spacer of 1
nucleotides

<400> 26
agcttaggtc agtgaccta

19

<210> 27
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 2
nucleotides

<400> 27
agcttaggtc acgtgaccta

20

<210> 28
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 3
nucleotides

<400> 28
agcttaggtc acagtgacct a

21

<210> 29
<211> 22
<212> DNA
<213> Artificial Sequence

A
cont

12

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 4
nucleotides

<400> 29
agcttaggtc acatgtgacc ta

22

<210> 30
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 5
nucleotides

<400> 30
agcttaggtc acactgtgac cta

23

<210> 31
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 6
nucleotides

<400> 31
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23

<210> 32
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: IR-M

<400> 32
agcttacgtc atgacgta

18

<210> 33
<211> 33
<212> DNA
<213> Homo sapiens

<400> 33
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<210> 34
 <211> 33
 <212> DNA
 <213> Homo sapiens

<400> 34
 tagaatatga actcaaagga ggtaagcaaa ggg

33

<210> 35
 <211> 32
 <212> DNA
 <213> Homo sapiens

<400> 35
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32

<210> 36
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
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<400> 36
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25

A' part
 <210> 37
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide for PCR

<400> 37
 gtccttgggg tcttctacct ttctc

25

<210> 38
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
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<400> 38
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25

<210> 39
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide for PCR

<400> 39
tgaacttcat gaact

15

<210> 40
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 40
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25

<210> 41
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative peptide

<400> 41
Arg Gly Lys Thr Cys Ala
1 5

<210> 42
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 42
tggttcttcattt gttct

15

<210> 43
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 43
acaacttcat gaact

15

<210> 44
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Example of a
response element suitable for practice of the
invention method

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cont'd
<220>
<221> modified_base
<222> (7)..(11)
<223> This region may encompass 5, 4 or 3 nucleotides,
independently selected from a, c, t or g

<400> 44
aggtcannnn naggtca

17